Canada-Newfoundland
Water Quality Monitoring Agreement
Annual Work Schedule 2005-2006

The attached Schedules A, B, C, D, E, F, G, H and I outline work activities to be carried out during the current fiscal year under the Canada-Newfoundland Water Quality Monitoring Agreement. All nine Schedules have been reviewed and approved by the Administrators of the Agreement.

Neil M. Burgess
Administrator, on behalf of
Environment Canada

Martin Goebel, P.Eng
Administrator, on behalf of
Newfoundland & Labrador Environment
& Conservation

Schedule A

Agreement Committees

The following officials are named to administer this Agreement according to Article x:

Mr. Neil M. Burgess	Environment Canada Atlantic Region, on behalf of Canada
Mr. Martin Goebel	Department of Environment & Conservation, on behalf of Newfoundland & Labrador

The Administrators will be assisted by a Coordinating Committee consisting of the following:

Mr. Art Cook	Environment Canada Atlantic Region
Mr. Haseen Khan	Water Resources Management Division, Newfoundland & Labrador Department of Environment & Conservation

Schedule B

Station Location, Designation

and Sampling Frequency

Index Station Location, Designation and Sampling Frequency 2005-2006

Station #	Description	Latitude	Longitude	Samples/year Sampled By	Remarks
EASTERN REGION					
NF02ZK0005	Northeast River	47 16 23	53 50 25	P 4	
NF02ZL0029	Goulds Brook	47 30 18	53 17 28	P 4	
NF02ZM0004	Waterford River	47 31 19	52 48 29	P 4	
NF02ZM0009	Waterford River	47 31 46	52 44 34	P 6	
NF02ZM0014	Virginia River	47 35 02	52 41 29	P 12	
NF02ZM0015	Quidi Vidi Outlet	47 35 02	52 40 51	P 6	
NF02ZM0016	Rennies River	47 34 40	52 42 03	P 6	
NF02ZM0098	Virginia River	47 35 56	52 45 17	P 4	
NF02ZM0109	Mundy Pond	47 33 40	52 44 38	P 4	
NF02ZM0144	Kelly's Brook	47 34 28	52 42 45	P 6	
NF02ZM0175	Waterford River	47 31 34	52 45 48	P 4	
NF02ZM0176	South Brook	47 31 41	52 44 48	P 4	
NF02ZM0177	Rennies River	47 34 28	52 42 36	P 4	
NF02ZM0178	Learys Brook	47 34 21	52 44 21	P 4	RT
NF02ZM0179	Virginia River	47 35 47	52 42 06	P 4	
NF02ZM0180	Virginia River	47 35 59	52 42 02	P 4	
NF02ZM0181	Waterford River	47 32 53	52 43 09	P 6	
NF02ZM0182	Waterford River	47 31 07	52 51 21	P 4	
NF02ZM0183	Kelligrews River	47 29 45	53 01 03	P 4	
NF02ZM0184	Learys Brook	47 34 16	52 47 29	P 4	
NF02ZM0185	South Brook	47 29 37	52 51 02	P 4	
NF02ZN0002	Northwest Brook	46 45 33	53 23 25	P 4	
NF02ZN0004	Salmonier River	47 10 54	53 23 56	P 4	
NF02ZM0294	Manuals River	47 31 11	57 56 41	P 4	
NF02ZG0016	Garnish River	47 13 00	55 19 48	F 6	
NF02ZH0001	Pipers Hole River	47 55 51	54 16 25	F 6	
NF02ZK0001	Rocky River	47 13 38	53 34 09	F 6	
CENTRAL REGION					
NF02YM0004	South West Brook	49 55 15	56 13 45	P 4	
NF02YM0003	Indian Brook	49 29 53	56 10 35	P 4	
NF02YO0123	South Twin Lake	49 11 11	55 55 24	P 6	
NF02YO0189	Joe's Lake	49 01 43	56 04 01	P 6	
NF02YO0107	Exploits River	48 45 34	56 35 32	P 6	
NF02YO0020	Exploits River	48 56 55	55 54 56	P 12	
NF02YO0001	Exploits River	48 55 27	55 39 21	P 12	
NF02YO0142	Corduroy Brook	48 56 21	55 39 47	P 12	
NF02YO0143	Exploits River	49 01 15	55 27 15	P 12	
NF02YO0006	Peter's River	49 06 21	55 24 38	P 12	RT
NF02YQ0006	NorthW. Gander River	48 34 54	55 30 20	P 4	
NF02YQ0030	Gander River	48 59 41	54 52 04	P 4	
NF02YR0001	Pound Cove Brook	49 10 40	53 33 36	P 4	
NF02YR0021	Middle Brook	48 48 08	54 13 34	P 4	
NF02YS0001	Terra Nova River	48 30 27	54 12 43	P 6	
NF02YS0011	Terra Nova River	48 38 27	54 02 11	P 6	
NF02YS0083	Northwest River	48 23 44	54 11 53	P 6	
NF02ZF0020	Bay du Nord River	47 44 45	55 26 23	F 4	HS

WESTERN REGION

NF02YE0005	Western Brook	49 49 49	57 51 23	P 4	
NF02YG0001	Main River	49 46 10	56 54 15	P 6	
NF02YG0020	Eagle Mountain Brook	49 49 53	57 17 15	P 6	
NF02YH0018	Lomond River	49 24 07	57 43 49	P 4	
NF02YJ0004	Pinchgut Brook	48 47 51	58 03 43	P 6	
NF02YL0011	Humber River	49 20 54	57 14 07	P 6	
NF02YL0012	Humber River	48 59 01	57 45 40	P 6	RT
NFO2YL0013	Corner Brook	48 56 40	57 56 12	P 6	
NF02YL0029	Wild Cove Brook	48 58 28	57 53 02	P 6	
NF02YN0001	Lloyds River	48 18 16	57 43 07	P 4	
NF02ZA0006	Grand Codroy R.	47 52 08	59 07 05	P 6	
NF02ZB0001	Isle aux Mort River	47 36 50	59 00 33	F 6	
NF02ZC0001	Grandy's Brook	47 51 25	57 44 00	F 6	HS
NF02ZD0003	Grey River	47 44 35	56 56 03	F 4	HS
NF02YC0001	Torrent River	50 36 44	57 10 05	F 6	
NF02YJ0006	Harry's River	48 34 32	58 21 48	F 6	

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NF02XA0001	Little Mecatina River	52 13 42	61 19 32	F 4	HS
NF03NF0013	Ugjoktok River	55 13 60	61 17 57	F 4	HS
NF03OC0012	Atikonak River	52 58 03	64 39 40	F 4	HS
NF03OD0011	East Metchin River	53 26 07	63 14 03	F 4	HS
NF03OE0001	Churchill River	53 14 52	60 47 21	F 6	HS
NF03OE0030	Minipi River	52 36 53	61 11 11	F 4	HS
NF03OE0032	Pinus River	53 08 52	61 33 31	F 4	HS
NF03OE0033	Big Pond Brook	53 30 43	60 17 31	F 4	HS
NF03PB0025	Naskaupi River	54 07 54	61 25 45	F 4	HS
NF03QC0001	Eagle River	53 27 54	57 33 29	F 4	HS
NF03QC0002	Alexis River	52 38 57	56 52 17	F 4	HS

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NF03OE0036	Pinus River	53 02 25	61 17 45	F3	
NF03PB0027	Naskaupi River	53 47 44	60 50 26	F3	HS
NF03PB0032	Susan River	53 44 17	60 56 48	F3	HS
NF03QA0045	Kenamu River	53 28 34	59 55 01	F3	HS
NF03QA0066	Kenamu River	52 46 50	60 10 38	F3	HS

LABRADOR VOISEY'S BAY

NF03NE0001	Reid Brook	56 22 22	62 09 43	C	HS/RT
NF03NE0002	Camp Pond Brook	56 20 32	62 06 24	C	HS/RT
NF03NE0011	Lower Reid Brook	56 18 18	62 05 34	C	HS/RT

P-Provincial
F-Federal
C-Contributed
HS - Helicopter site
RT-Real Time Station

Notes:

1. A total of 77 stations will be sampled during 2005-2006. Of these 77 sampling stations, 3 stations are real-time stations. An additional 3 stations are utilized as real-time stations only.

2. Monthly stations will be sampled in the first week of every month; bi-monthly samples in the first week of April, June, August, October, December, and February and quarterly samples in the first week of April, July, October, and January.

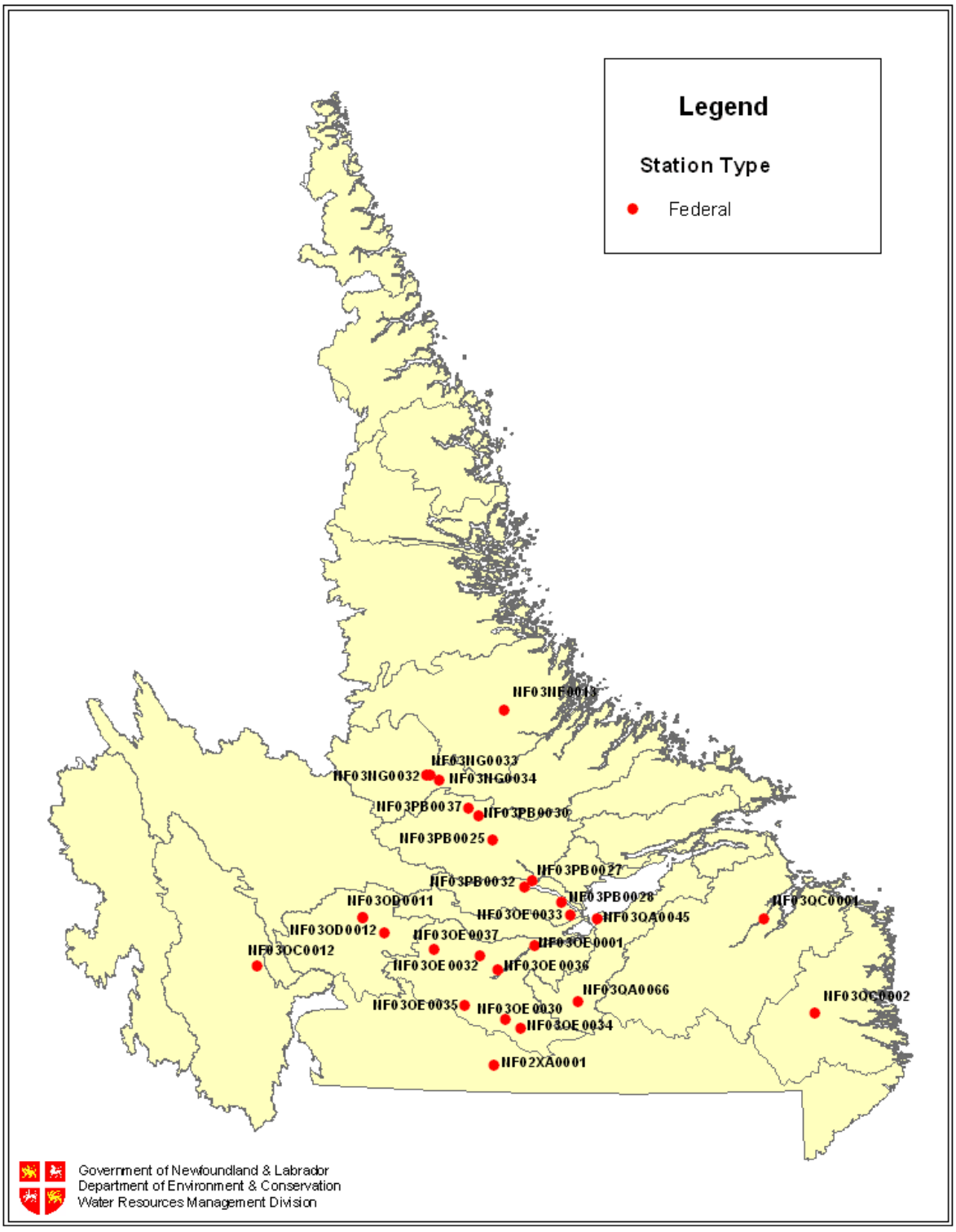
3. The focus is to optimize the number of stations sampled in the 2005-06 work schedule, analyse existing data, and prepare technical reports regarding water quality at index stations.

4. For Ashkui sites, samples are collected 3 times a year and analysed at the Moncton Laboratory for physical parameters, major ions, nutrients, Hg (trace), metals and for chlorophyll at DalTech.

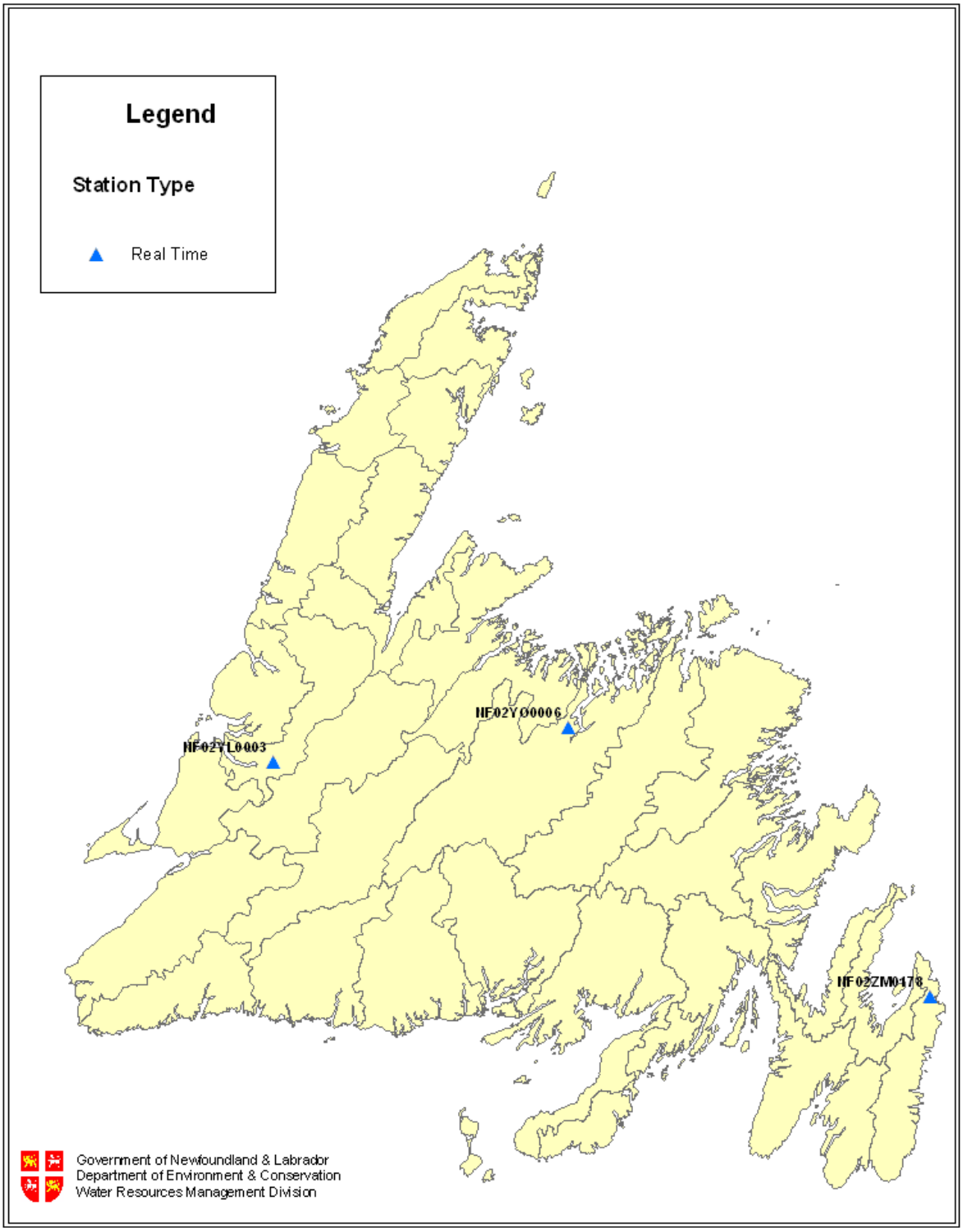
5. The Regional Water Quality Officer position in the Western region is currently vacant. This vacancy will affect the field work in the Western region.

Water Quality Stations 2005-06 - Newfoundland

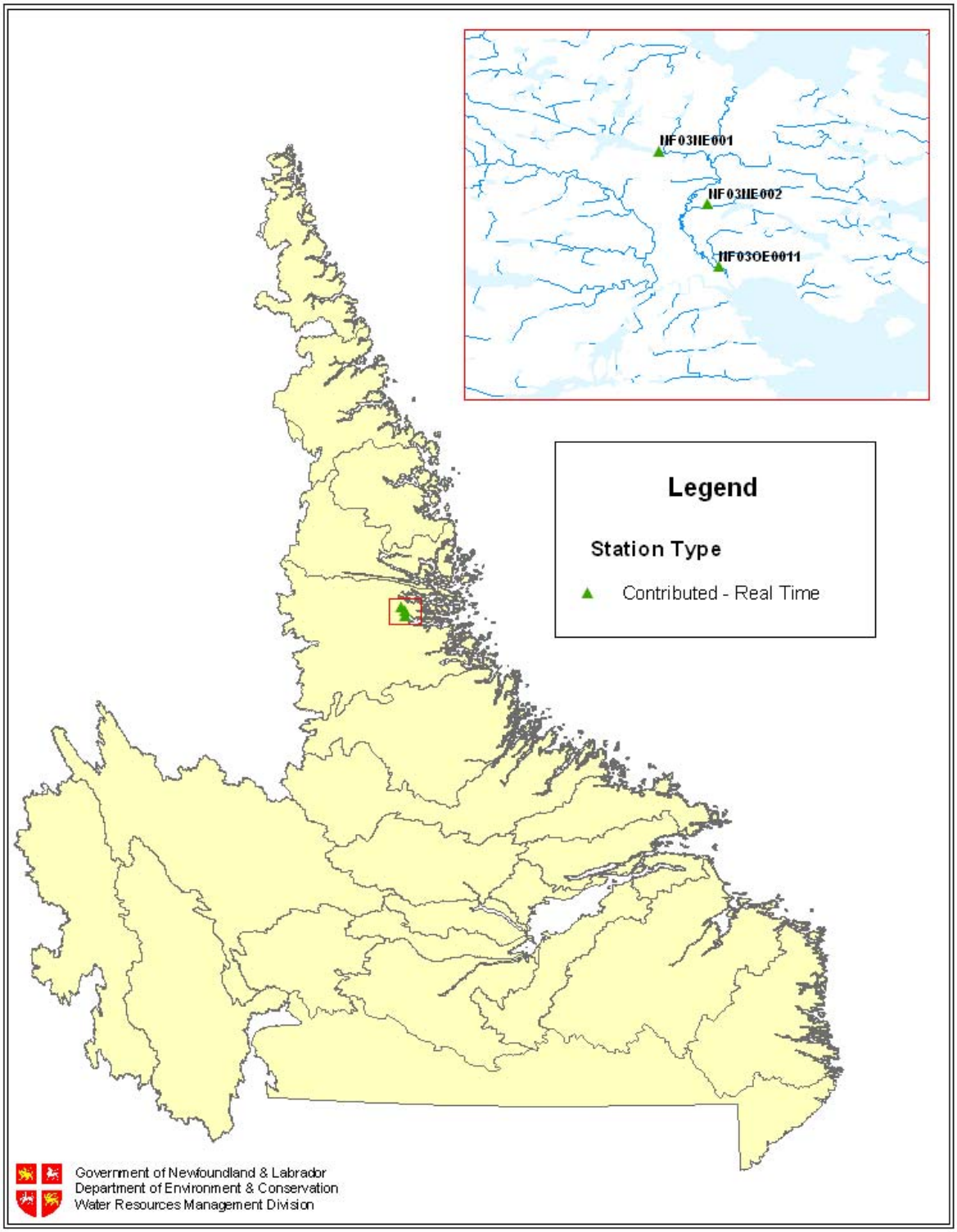
Water Quality Stations 2005-06 - Labrador



Real Time Water Quality Stations 2005-06 - Newfoundland



Real Time Water Quality Stations 2005-06 - Labrador



Schedule C

Sampling Media and Analytical Parameters

Sampling Media and Analytical Parameters 2005 - 2006

Station #	Description	Sampling Media	Analytical Group	Analyzed by:
EASTERN REGION				
NF02ZK0005	Northeast River	W + M	W1, W2, W3, W5	F
NF02ZL0029	Goulds Brook	W + M	W1, W2, W3, W5	F
NF02ZM0004	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0009	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0014	Virginia River	W + M	W1, W2, W3, W5	F
NF02ZM0015	Quidi Vidi Outlet	W + M	W1, W2, W3, W5	F
NF02ZM0016	Rennies River	W + M	W1, W2, W3, W5	F
NF02ZM0098	Virginia River	W + M	W1, W2, W3, W5	F
NF02ZM0109	Mundy Pond	W + M	W1, W2, W3, W5	F
NF02ZM0144	Kelly's Brook	W +M	W1, W2, W3, W5	F
NF02ZM0175	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0176	South Brook	W + M	W1, W2, W3, W5	F
NF02ZM0177	Rennies River	W + M	W1, W2, W3, W5	F
NF02ZM0178	Learys Brook	W + M	W1, W2, W3, W5	F
NF02ZM0179	Virginia River	W + M	W1, W2, W3, W5	F
NF02ZM0180	Virginia River	W + M	W1, W2, W3, W5	F
NF02ZM0181	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0182	Waterford River	W + M	W1, W2, W3, W5	F
NF02ZM0183	Kelligrews River	W + M	W1, W2, W3, W5	F
NF02ZM0184	Learys Brook	W + M	W1, W2, W3, W5	F
NF02ZM0185	South Brook	W + M	W1, W2, W3, W5	F
NF02ZN0002	Northwest Brook	W + M	W1, W2, W3, W5	F
NF02ZN0004	Salmonier River	W + M	W1, W2, W3, W5	F
NF02ZM0294	Manuals River	W + M	W1, W2, W3, W5	F
NF02ZG0016	Garnish River	W + M	W1, W2, W3, W5	F
NF02ZH0001	Pipers Hole River	W + M	W1, W2, W3, W5	F
NF02ZK0001	Rocky River	W + M	W1, W2, W3, W5	F
CENTRAL REGION				
NF02YM0004	South West Brook	W + M	W1, W2, W3, W5	F
NF02YM0003	Indian Brook	W + M	W1, W2, W3, W5	F
NF02YO0123	South Twin Lake	W + M	W1, W2, W3, W5	F
NF02YO0189	Joe's Lake	W + M	W1, W2, W3, W5	F
NF02YO0107	Exploits River	W + M	W1, W2, W3, W5	F
NF02YO0020	Exploits River	W + M	W1, W2, W3, W5	F
NF02YO0001	Exploits River	W + M	W1, W2, W3, W5	F
NF02YO0142	Corduroy Brook	W + M	W1, W2, W3, W5	F
NF02YO0143	Exploits River	W + M	W1, W2, W3, W5	F
NF02YO0006	Peter's River	W + M	W1, W2, W3, W5	F
NF02YQ0006	NorthW. Gander River	W + M	W1, W2, W3, W5	F
NF02YQ0030	Gander River	W + M	W1, W2, W3, W5	F
NF02YR0001	Pound Cove Brook	W + M	W1, W2, W3, W5	F
NF02YR0021	Middle Brook	W + M	W1, W2, W3, W5	F
NF02YS0001	Terra Nova River	W + M	W1, W2, W3, W5	F
NF02YS0011	Terra Nova River	W + M	W1, W2, W3, W5	F
NF02YS0083	Northwest River	W + M	W1, W2, W3, W5	F
NF02ZF0020	Bay du Nord River	W + M	W1, W2, W3, W5	F

WESTERN REGION

NF02YE0005	Western Brook	W + M	W1, W2, W3, W5	F
NF02YG0001	Main River	W + M	W1, W2, W3, W5	F
NF02YG0020	Eagle Mountain Brook	W + M	W1, W2, W3, W5	F
NF02YH0018	Lomond River	W + M	W1, W2, W3, W5	F
NF02YJ0004	Pinchgut Brook	W + M	W1, W2, W3, W5	F
NF02YL0011	Humber River	W + M	W1, W2, W3, W5	F
NF02YL0012	Humber River	W + M	W1, W2, W3, W5	F
NF02YL0013	Corner Brook	W + M	W1, W2, W3, W5	F
NF02YL0029	Wild Cove Brook	W + M	W1, W2, W3, W5	F
NF02YN0001	Lloyds River	W + M	W1, W2, W3, W5	F
NF02ZA0006	Grand Codroy River	W + M	W1, W2, W3, W5	F
NF02ZB0001	Isle Aux Morts River	W + M	W1, W2, W3, W5	F
NF02ZC0001	Grandy Brook	W + M	W1, W2, W3, W5	F
NF02ZD0003	Grey River	W + M	W1, W2, W3, W5	F
NF02YC0001	Torrent River	W + M	W1, W2, W3, W5	F
NF02YJ0006	Harrys River	W + M	W1, W2, W3, W5	F

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NF02XA0001	Little Mecatina River	W	W1, W2, W3	F
NF03NF0013	Ugjoktok River	W	W1, W2, W3	F
NF03OC0012	Atikonak River	W	W1, W2, W3	F
NF03OD0011	East Metchin River	W	W1, W2, W3	F
NF03OE0001	Churchill River	W	W1, W2, W3	F
NF03OE0030	Minipi River	W	W1, W2, W3	F
NF03OE0032	Pinus River	W	W1, W2, W3	F
NF03OE0033	Big Pond Brook	W	W1, W2, W3	F
NF03PB0025	Naskaupi River	W	W1, W2, W3	F
NF03QC0001	Eagle River	W	W1, W2, W3	F
NF03QC0002	Alexis River	W	W1, W2, W3	F

LABRADOR ASHKUI

NF03OE0036	Pinus River	W	W1, W2, W3	F
NF03PB0027	Naskaupi River	W	W1, W2, W3	F
NF03PB0032	Susan River	W	W1, W2, W3	F
NF03QA0045	Kenamu River	W	W1, W2, W3	F
NF03QA0066	Kenamu River	W	W1, W2, W3	F

LABRADOR VOISEY'S BAY

NF03NE0001	Reid Brook	W	W1, W2, W3	F
NF03NE0002	Camp Pond Brook	W	W1, W2, W3	F
NF03NE0011	Lower Reid Brook	W	W1, W2, W3	F

W - Water
M - Microbiology
S - Sediment
B - Biota
F - Federal lab

* Refer to Table C.1 for analytical group codes

Notes:

1. Microbiological (total and fecal coliform) analysis is carried out by the Provincial Public Health Lab.

2. All other analytical work is carried out by federal labs in Burlington and Moncton.

3. A total of 406 water samples will be analysed by federal labs in Burlington and Moncton.

4. Some physical parameters (temperature, pH, dissolved oxygen, and conductivity) are analysed by Water Quality Officers in the field, as well as by Burlington and Moncton labs.

Table C.1

ANALYTICAL PARAMETERS

Parameter Set	Analysis Type	Parameter Group
1) Water - Physical Parameters, Major Ions and Nutrients		
Temperature, pH, Specific Conductance, Dissolved Oxygen	Field	W1
Turbidity, Colour, Calcium (Diss.), Magnesium (Diss.), Potassium (Diss.), Sodium (Diss.), Alkalinity Total or Gran, Chloride (Diss.) IC, Sulphate (Diss.) IC, Dissolved Organic Carbon, Total Nitrogen, Nitrate and Nitrite (Diss.), Total Phosphorus, Silica Reactive	Lab	W1
2) Water - Total Extractable Metals		
Aluminium, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Manganese, Molybdenum, Nickel, Strontium, Vanadium, Zinc	ICAP	W2
3) Water - Total Dissolved Metals		
Aluminium, Cadmium, Cobalt, Copper, Iron, Lead, Nickel, Zinc	Lab	W3
4) Water - Selected Organics		
OC/PCB	Lab	W4
5) Water - Bacteria		
Total coliform, Fecal coliforms	Lab	W5
6) Sediments - Metals and Organics		
Aluminium, Cadmium, Chromium, Copper, Iron, Lead, Mercury, OC/PCB, Organic Carbon, Particle Size Analysis, Zinc	Lab	S1
7) Fish - Metals, Organics and Physiology		
Cadmium, Copper, Lead, Lipid Content, Mercury, OC/PCB, Physiology, Zinc	Lab	B1
8) Fish - Organics		
Scan	Lab	B2

Note:

1. Newfoundland and Labrador are involved with a pilot project with NLET to submit sample submission forms in a digitized format through a website.

Schedule D

Data Management and Technical Reports

Table D.1

DATA MANAGEMENT AND TECHNICAL REPORTS

Project	Activity	Responsible Agency
1. Quality Assurance and Quality Control	1.1 Quality control procedures	Environment Canada
	1.2 Guidelines for good laboratory practice	Environment Canada
	1.3 Guidelines for instrument performance	Environment Canada
2. Data Management	2.1 Data recording, documentation and validation	Environment Canada
	2.2 Data screening and verification	Environment Canada
	2.3 Data audits, custody and transfer	Environment Canada
	2.4 Management of national water quality database (Envirodat)	Environment Canada
	2.5 Management of provincial water quality database	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	2.6 Quality assurance and quality control of datasets	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
3. RésEau / CANAL	3.1 GIS application for data reporting: • site documentation database update • bacteriological database update • fact sheet update	Environment Canada, Ecosystem Science and Information Division (Sarah Hall and Group) & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.2 Development of protocols for application of Water Quality Index for reporting real time water quality data	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division

Project	Activity	Responsible Agency
	3.3 Development of web-based tool for management and updating of site documentation database	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.4 Development of web-based tool for management and updating of bacteriological database	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.5 Development and implementation of online validation system	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.6 Setup and vulnerability assessment of Newfoundland and Labrador CANAL server	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.7 Implementation of site specific watershed Water Quality Index roll-up capability	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.8 Implementation and further testing of a site specific guidelines calculation using CCME background concentration method	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.9 Further testing of the Water Quality Index on-line service	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.10 Continued implementation and testing of automated Water Quality Index calculation for website	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	3.11 Review and comment on Environment Canada's Atlantic Region Envirodat data download and display tools	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division

Project	Activity	Responsible Agency
	3.12 Development of a protocol for using Water Quality Index to detect land use changes	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
4. National Water Quality Indicators Project	4.1 Pilot scale testing and development of protocols	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	4.2 Site selection, water quality data extraction, and manipulation	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	4.3 Decision on WQI inputs and calculation of ratings for each station	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	4.4 Overview interpretation of results (2-pager on parameters & issues driving the ratings and spatial trends)	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	4.5 Site level templates	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	4.6 Short methods paper on protocol used for WQI calculations	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	4.7 Development of protocols and calculation of site specific guidelines	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division

Project	Activity	Responsible Agency
5. Canadian Wetlands Inventory Project	5.1 Pilot project to delineate and classify wetlands in NL, particularly the Avalon Peninsula	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	5.2 LandSat and RADARSAT image analysis	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	5.3 Establish protocols for classifying wetlands and use of higher resolution data	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
6. Technical Documents	6.1 Fact sheets on selected rivers	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	6.2 Water quality of St. John's rivers	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	6.3 Water Quality Index - research and development	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	6.4 Intensive survey report	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	6.5 Canal project position paper	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	6.6 Further documentation and implementation of Water Quality Index protocols	Environment Canada & Newfoundland and Labrador Environment and Conservation, Water Resources Management Division

Project	Activity	Responsible Agency
	6.7 Development of digital contour maps for water quality parameters	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	6.8 Special study on Exploits River	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	6.9 Water quality trend analysis	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division
	6.10 Redesign of the water quality network	Newfoundland and Labrador Environment and Conservation, Water Resources Management Division

Schedule E

Special Studies

All previous special study reports for water, biota and sediments surveys will be finalized in this fiscal year, in consultation with Environment Canada.

Schedule F

Payment Schedule

Table F.1

PAYMENT SCHEDULE

Project	Activity	Payment	Date	Remarks
RésEau / CANAL	Development and implementation of online validation system for delivery of water quality index results	$13,000	November, 2005	$13,000 to be paid to Exchequer of NL by Environment Canada
	Further testing of the Water Quality Index on-line service			
	Review and feedback for the online Envirodat download and display tools			
	Development of protocols for application of real time WQI calculation to real time water quality data			
National Water Quality Indicators Project	Site selection and data extraction	$15,000	November, 2005	$15,000 to be paid to Exchequer of NL by Environment Canada
	Calculation of WQI ratings for each station and interpretation of results			
	Site-level templates and WQI methods paper			
	Development of protocols and calculation of site specific guidelines	$5,000	January, 2006	$5,000 to be paid to Exchequer of NL by Environment Canada
	Data analysis and report preparation			
Canadian Wetlands Inventory Project	Pilot project to delineate and classify wetlands in NL, particularly the Avalon Peninsula	$10,000	January, 2006	$10,000 to be paid to Exchequer of NL by Environment Canada
	LandSat and RADARSAT image analysis			
	Establish protocols for classifying wetlands and use of higher resolution data			
TOTAL		$43,000		

Schedule G

In-Kind Contribution Schedule

Table G.1

IN-KIND CONTRIBUTION SCHEDULE

Project	Activity	Environment Canada	NL Environment & Conservation
Quality Assurance and Quality Control	Quality control procedures and guidelines for good laboratory practice and instrument performance	$9,000	N/A
Data Management	Data documentation, validation, screening, verification, transfer and management of both national and provincial water quality databases to ensure quality assurance and quality control of datasets	$8,000	$8,000
RésEau / CANAL	Development and implementation of online validation system for delivery of water quality index results	$13,000	$20,000
	Further testing of the Water Quality Index on-line service		
	Review and feedback for the online Envirodat download and display tools		
	Development of protocols for application of real time WQI calculation to real time water quality data		
National Water Quality Indicators Project	Site selection and data extraction	$45,000	$50,000
	Calculation of WQI ratings for each station and interpretation of results		
	Site-level templates and WQI methods paper		
	Development of protocols and calculation of site specific guidelines		

Project	Activity	Environment Canada	NL Environment & Conservation
	Data analysis and report preparation		
Canadian Wetlands Inventory Project	Pilot project to delineate and classify wetlands in NL, particularly the Avalon Peninsula	$25,000	$40,000
	LandSat and RADARSAT image analysis		
	Establish protocols for classifying wetlands and use of higher resolution data		
Technical Documents	Fact sheets on water quality of selected rivers	N/A	$ 25,000
TOTAL		$100,000	$143,000

Schedule H

Samples Collected in 2004-2005 Fiscal Year

Table H.1

SAMPLES COLLECTED IN 2004-2005 FISCAL YEAR

Station #	Description	Number of Samples
EASTERN REGION		
NF02ZK0005	Northeast River	2
NF02ZL0029	Goulds Brook	2
NF02ZM0004	Waterford River	3
NF02ZM0009	Waterford River	5
NF02ZM0014	Virginia River	6
NF02ZM0015	Quidi Vidi Outlet	5
NF02ZM0016	Rennies River	5
NF02ZM0098	Virginia River	3
NF02ZM0109	Mundy Pond	3
NF02ZM0144	Kelly's Brook	4
NF02ZM0175	Waterford River	3
NF02ZM0176	South Brook	3
NF02ZM0177	Rennies River	3
NF02ZM0178	Learys Brook	3
NF02ZM0179	Virginia River	3
NF02ZM0180	Virginia River	3
NF02ZM0181	Waterford River	5
NF02ZM0182	Waterford River	1
NF02ZM0183	Kelligrews River	2
NF02ZM0184	Learys Brook	3
NF02ZM0185	South Brook	3
NF02ZN0002	Northwest Brook	2
NF02ZN0004	Salmonier River	2
NF02ZM0294	Manuals River	2
CENTRAL REGION		
NF02YM0004	South West Brook	4
NF02YM0003	Indian Brook	3
NF02YO0123	South Twin Lake	2

Station #	Description	Number of Samples
NF02YO0189	Joe's Lake	2
NF02YO0107	Exploits River	3
NF02YO0020	Exploits River	5
NF02YO0001	Exploits River	7
NF02YO0142	Corduroy Brook	7
NF02YO0143	Exploits River	9
NF02YO0006	Peter's River	6
NF02YO0128	Exploits River	2
NF02YO0021	Exploits River	3
NF02YQ0006	NorthW. Gander River	2
NF02YQ0030	Gander River	4
NF02YR0001	Pound Cove Brook	5
NF02YR0021	Middle Brook	5
NF02YS0001	Terra Nova River	3
NF02YS0011	Terra Nova River	3
NF02YS0083	Northwest River	3
WESTERN REGION		
NF02YE0005	Western Brook	4
NF02YG0001	Main River	6
NF02YG0020	Eagle Mountain Brook	5
NF02YH0018	Lomond River	4
NF02YJ0004	Pinchgut Brook	6
NF02YL0011	Humber River	4
NF02YL0012	Humber River	6
NF02YL0013	Corner Brook	6
NF02YL0029	Wild Cove Brook	6
NF02YN0001	Lloyds River	4
NF02ZA0006	Grand Codroy River	5
	TOTAL SAMPLES 2004-2005	**210**

Note:
1. Total number of samples collected in 2004-2005 does not include triplicate samples.

Schedule I

Meeting Minutes

Canada-Newfoundland Water Quality Monitoring Agreement Meeting
St. John's, NL Confederation Building
Thursday & Friday, May 5th/6th, 2005

Meeting Minutes

Attendance

Jean-Guy Deveau (JG)
Al Hanson (AH)
Neil M. Burgess (NB)
Craig McMullin (CM)
Sarah Hall (SH)
Art Cook (AC)
Howie Wills (HW)
Haseen Khan (HK)
Amir Ali Khan (AK)
Annette Tobin (AT)
Paul Neary (PN)
Jennifer Bonnell (JB)

Jurisdictional Overview

- Environment Canada (AH)
  - AH discussed new initiatives within EC
  - national programs by regional implementation
  - First Nations water quality program – source water protection
  - team approach to initiatives
  - integrated water resources management – proposal for funds
- Water Resources Management Division (HK)
  - HK discussed WRMD projects
  - wastewater management – CEPA national committee
  - drinking water quality program
  - budget for WQMA program remained the same as previous year

Annual Work Schedule 2005-06

- Monitoring activities (HK)
  - monitoring activities for 2004-05 went fine
  - work schedule a good platform for additional joint projects
  - gave a brief overview of the work schedule and its purpose for those who were unfamiliar with WQMA
- Northern Ecosystem Issues
  - Labrador stations are taken care of by HW shop in conjunction with the Hydrometric agreement
- Analytical Services (AC)
  - There is one person responsible for data management with Envirodat
  - NLET sample submission forms are current in a pilot project for on-line submission; WRMD has agreed to participate; on-line sample submission will begin in May 2005
  - special projects analysis now goes to Moncton due to budget (credit) loss
  - regular analysis from NLET is stable
  - Envirodat is now on-line and data will be up to date
- Data Management (AK; SH)
  - there has been disjointed leadership on Envirodat in the past
  - SH is now responsible for Envirodat
  - Envirodat and ECOLIMS have both been extensively reviewed and issues identified

  - These issues have been addressed and are currently being implemented in Envirodat; changes have not been transferred outside the firewall yet
  - **WRMD will review Envirodat when revisions are complete**
  - a brief history of data management by EC and WRMD was given for the benefit of those who are new to the WQMA program; Envirodat was previously only available to EC and WRMD would download data every 2-3 years and enter into WRMD database; currently CANAL allows public access to Envirodat; WRMD are dropping their database and will access all data through CANAL
  - WRMD has developed an on-line site documentation database; includes all stations, development index, bacteriological database; will be available to the public when transferred outside the firewall
- Special Studies (HK; AC)
  - special studies implemented for areas with a lot of activities within a watershed which has high public interest; consists of intensive monitoring over a period of one week
  - results can be slow due to extensive biota analysis; currently in the process of analysis
  - there will be no special studies this year
  - this year will be used to clear all special studies reports to date
- Real Time Water Quality Monitoring Network (AK; AT)
  - goals of WRMD; to develop in-house expertise, address challenges and issues, start small network and continuously expand annually
  - combined with the Hydrometric network
  - VBNC – immensely successful; shows due diligence on part of VBNC; successful in detecting problems and addressing issues in timely and efficient manner; beneficial for both VBNC and WRMD
  - currently 7 stations (3 VB; Leary's Brook; Peter's River; Humber River; Hatchery Brook – research station)
  - New stations this year (3); Waterford River; tailings dam in VB; tailings dam in headwaters of Exploit's River
- Technical Reports
  - Special study on Exploits River; WQ trend analysis; redesign of WQ network; fact sheets on select rivers; site documentation; contour maps
    these reports require review
- **Items to be added to Annual Work Schedule are as follows:**
  - **payment schedule**
  - **show significant contributions on both sides**
  - **water quality indicators project**
  - **wetlands pilot project**

National Water Quality Indicators Project

- slight departure due to report due November 2005 on water quality in Canada
- all stations identified & WQI by end of June; more representative of country; many federal & regional dept involved; identification of gaps; site specific guidelines; tradeoffs for existing data
- **WRMD will send site specific guidelines paper to AH**
- report short term now but long term has to be considered
- data to be considered 2000-2003 (or last three consecutive years of data)

National Wetlands Inventory

- < uses LandSat & remote sensing; started in Labrador
- < **Pilot project will be initiated between EC and WRMD to identify wetlands in NL; Avalon peninsula**
- < will be tied to National Wetlands Inventory
- < pilot project will establish protocols
- < potential to combine with hydrometric stations

CANAL / ResEau Project

- < created databases for site profiles; WQI; bacteriological data
- < setup of server for technology/knowledge transfer
- < WRMD testing of CANAL website
- < error checks for WQI automation calculations
- < work on protocols for development of on-line website
- < WRMD wrote a couple of papers (regarding WQI) and have been peer-reviewed; this will allow for more acceptance by Canadians
- < **Security approval system will be worked on this year**
- < **Timeline for the creation of tools**
- < all tools use CCME protocols or methods
- < **Joint partnership with BC Environment; EC; WRMD**
    - o compare toxicity methods with BC method
    - o BC familiar with WQI and have done work to develop site specific guidelines without using BC approach
- < Problems in areas with little data
- < discussed how providing this information affects change in behaviour and ideas, recognizing issues and affecting policy
- < National Water Management program using ResEau to relate water quality to land use
- < public appreciation protects programs for downsizing and elimination
- < **Develop a formalized method to get feedback on Envirodat**
- < ResEau will be used as a pilot project for additional programs to provide water quality data and interpretation to Canadians

Other

- < **Formalization of Atlantic Canada Water Team (Federal and Provincial) and organization of regular meetings for information sharing**